

Remarks

Claims 1-13 are pending in this application. Claims 1-13 are rejected. Claims 1-5 and 7-9 have been amended.

Claim Rejections - 35 U.S.C. § 103

Claims 1-2, 4, 6, 8, 10, and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US 4,498,909 to Milner et al. ("Milner") in view of US 5,901,653 to Jennebach et al. ("Jennebach") and further in view of US 5,720,165 to Rizzie et al ("Rizzie").

Claim 1 has been amended to recite that the depressions both collect and hold ash and that they are configured to allow coarse ash particles to outgas while not loading combustion gas flow. This language is supported in the specification (as filed) on page 2, lines 24-31. Claim 1 has also been amended to incorporate part of previously presented claim 4, specifically that the ash separator is cylindrical and connected at the top tangentially to the outlet of the secondary combustion chamber. Claim 1 and the other claims that reference the "fuel and gasification space" and "combustion space" have been amended to replace "space" with "chamber" in order to more positively cite the structure. This change is supported in the Abstract and by the Figures.

Both of these new limitations distinguish the claimed invention from Milner, Jennebach, and Rizzie. The Examiner points to element 32 of Milner as the required depressions, but element 32 is an ash layer. (Col. 6, line 26). Applicant believes that the Examiner meant to point to element 39, ash plows that "cause the ash to spill from the edge of the table into two chutes 41." (Col. 5, lines 10-14). This removes the ash while the gasification procedure is on-going, contrary to the requirement of claim 1 that the ash is held in the fuel and gasification chamber to continue outgassing. It also highlights an important difference in the inventions of Milner and claim 1, Milner is an apparatus for producing syn-gas (Col. 1, lines 57-59) and only creates a gas and releases it to be stored via outlet 40 at the top of the tank (meaning it does not even pass through the grate and undergo further processing). In contrast, the invention

of claim 1 is for the production of high temperature gases that then release heat into a heat exchanger.

Furthermore, Rizzie does not teach an ash separator that is tangentially connected to the outlet of the secondary combustion chamber. The Examiner claims that Figs. 1, 4, and 6 teach this requirement, but these figures are cross-sections that do not show a tangential connection as in the claimed invention, nor is this taught in the text of the specification.

Regarding claim 2, the combustion chamber of Milner is roughly cylindrical with a vertical central axis and the depressions are below it with a substantially horizontal central axis. The depressions are therefore not parallel to the combustion chamber as required in the claimed invention (see Fig. 1 of the present application).

Accordingly, Applicant respectfully submits that claims 1 and 2 are patentable over Milner, Jennebach, and Rizzie. Claims 4, 6, 8, and 10 are ultimately dependent from claim 1 and are therefore patentable for at least the same reasons as above. Applicant therefore requests the withdrawal of the rejection under 35 U.S.C. 103(a) to claims 1-2, 4, 6, 8, and 10.

Claims 3, 5, 7, 9, 11, and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over '909 in view of '653 and '165 as applied to claims 1, 3, and 5 above, and further in view of US 6,758,149 to Oiwa et al ("Oiwa").

Claim 5, as amended, recites that the baffle plate is fitted below the opening of the pipe in such a manner that an annular opening for the depositing of ash remains between an outer wall of the ash separator and the baffle plate. The "baffle plate" in Rizzie is actually a casing 112 sealed about the opening of the duct 110 in order to allow air flow from valve 114 to combine with air in the duct 110. (Col. 7, lines 50-58). It is not a baffle plate and it is not fitted **below** the opening of the pipe, but is rather fixed around the opening (see Figs. 1, 4, and 6, the pipe opening is at the same level in all three). Furthermore, the Examiner points to the ash collector 100 as the annular opening required by claim 5. Claim 5 has been amended to more clearly describe that the opening is not like that in Rizzie (a mere pipe at the bottom of the

chamber), but is a relatively thin ring-like opening between the edge of the baffle plate and the wall of the ash separator. There is no such annular opening in Rizzie, just the pipe and casing at the top of the ash separator.

Accordingly, Applicant respectfully submits that claim 5 is patentable over Milner, Jennebach, Rizzie, and Oiwa. Claims 3, 7, 9, 11, and 13 ultimately depend from claim 1, and are therefore patentable for at least the same reasons as above. Applicant requests the withdrawal of the rejection under 35 U.S.C. 103(a) to claims 3, 5, 7, 9, 11, and 13.

Conclusion

Applicant has made a genuine effort to respond to each of the Examiner's objections and rejections in advancing the prosecution of this case. Applicant believes that all formal and substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested. If any additional issues need to be resolved, the Examiner is invited to contact the undersigned at his earliest convenience.

The Petition fee of \$555.00 along with the RCE fee of \$405.00 are being charged to Deposit Account No. 02-3978 via electronic authorization submitted concurrently herewith. The Commissioner is hereby authorized to charge any additional fees or credit any overpayments as a result of the filing of this paper to Deposit Account No. 02-3978.

Respectfully submitted,
CHRISTIAN HERLT

By /John E. Nemazi/
John E. Nemazi, Reg. No. 30,876
Attorney/Agent for Applicant

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BROOKS KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075-1238
Phone: 248-358-4400; Fax: 248-358-3351